FACE INVESTIGATION

SUBJECT: Logger Dies After a Log Skidder Rolled Downhill and Struck Him as he was Felling a Tree

SUMMARY: On December 11, 1997, a 37-year-old male logger (the victim) died after being struck by a log skidder. The victim and a co-worker were felling trees in separate work areas and hauling them to the landing with skidders. The victim used a log skidder he had purchased from another logger about 4 years before the incident. The skidder in this incident was over 20 years old, and had originally been equipped with a mechanical brake system. At some unknown time, the mechanical brake was replaced by a micro lock brake system. Throughout the morning, the victim and co-worker were in voice contact and shared a lunch break near the landing site. Around 3:30, the victim was felling trees on a slope with a 20% grade. He parked the skidder about 20 feet uphill in line with the tree he was felling. He engaged the micro lock system, kept the motor running, and positioned the blade near the ground. The skidder wheels were not blocked by any object, nor was the blade hooked over a stump to prevent the machine from rolling backwards. He apparently stood near the tree, facing downhill with his back to the skidder, and began a wedge cut with his chain saw. The incident was unwitnessed, but apparently the brakes failed and the skidder rolled downhill, striking the victim with the left rear wheel and crushing him against the tree. The co-worker heard the victim's cries for help and ran to the scene. After seeing the victim injured on the ground, the co-worker ran to his own truck. He tried to use his CB radio to call for help, but it didn't work. The co-worker drove his own skidder to where the victim was lying, and placed him in the skidder. He drove the skidder to his truck, carried the victim to the truck's passenger seat, then drove almost 15 miles to the hospital. The victim was taken to surgery, then transferred to intensive care where he died about eight hours after the incident. Sheriff's and coroner authorities were notified. The skidder motor was still running when the sheriff's deputies arrived the next morning. They turned it off and secured the area, then called OSHA. The FACE investigator concluded that, to prevent similar occurrences, employers should:

- **obtain and follow log skidder manufacturers' recommendations before using modified equipment.**
- **develop and enforce a safety policy that requires loggers to block a log skidder parked on a grade.**
- **provide personal communication devices to workers in isolated worksites.**

INTRODUCTION:

On December 11, 1997, a 37 year-old male logger died after being struck by a skidder that rolled downhill. The Wisconsin FACE field investigator was notified by the Area OSHA office on December 12, 1997. On December 17, 1998, the field investigator visited the incident site with the OSHA inspector and interviewed the employer and co-worker. The FACE investigator also obtained the death certificate, and the coroner's and sheriff's reports.

The incident occurred at a privately-owned woodlot where a lumber company held timber rights. A logging

company had a contract to fell trees and skid logs for the lumber company. The logging company had been in business for about forty years, and employed seven people including the victim and the co-worker.

The company has a written safety policy and a program for the felling and hauling operations, including policies for effective primary and secondary braking systems on logging equipment. There was no written policy to stabilize equipment parked on a grade, but employees received verbal instruction to do so. Tailgate safety training was conducted by the company manager, and additional logging safety training was provided to employees by Forest Industry Safety Training Alliance (FISTA).

For about six years before the incident, the victim had worked seasonally for the company as a log cutter and also worked for a construction company at other times of the year. He had worked as a logger for at least three years before being hired by the logging company.

INVESTIGATION:
The woodlot was located in a forest area, about seven miles from the paved road; and 15 miles from the nearest emergency medical facilities. The terrain included small hills and valleys with moderate amounts of underbrush. The soil was firm and dry, with a light snow covering in patchy areas.

The victim had purchased the log skidder about 4 years before the incident. It was over twenty years old, and had been equipped with a mechanical parking brake when manufactured but was fitted with a hydraulic micro-lock braking system at an unknown time. The skidder had large rubber tires with chains on the front, a winch on the back to drag and haul logs, and a blade on front (see figure). The victim regularly arranged for maintenance and repairs from a local mechanic.

Throughout the morning of the incident, the victim and the co-worker felled trees in separate work areas and hauled logs to the landing with skidders. They were in voice contact, and shared a lunch break near the landing site. After the break, they returned to their respective cutting areas and continued felling trees and hauling logs.

By 3:30, the victim was working on a hillside with about a 20% grade. He had 2 logs ready to haul and was in the process of cutting a notch to fell a third tree. He parked the skidder with the rear wheels about 20 feet uphill from the tree he was felling, with the motor running and the blade on the ground. There were several freshly cut stumps in the area where the skidder was parked, but they were not used to block the skidder. The victim apparently stood near the tree, facing downhill with his back to the skidder, and began an initial chain saw cut to create a wedge. The skidder rolled downhill, striking the victim with the left rear wheel and crushing him against the tree before he fell alongside the wheel. The victim was wearing hearing protection and may not have heard the skidder moving downhill over the sound of the chain saw and skidder motor.

The co-worker heard the victim's cries for help and ran to the scene. After seeing the victim injured on the ground, the co-worker ran to his own truck. He tried to use his CB radio to call for help, but it didn't work. The co-worker drove his own skidder to where the victim was lying, and placed him in the skidder compartment. He drove the skidder to his truck, carried the victim to the truck's passenger seat, then drove almost 15 miles

over logging roads and paved highway to the hospital. The victim was taken to surgery for repair of pelvic injuries, then transferred to intensive care where he died about eight hours after the incident. Sheriff's and coroner authorities were notified. The skidder motor was still running when the sheriff's deputies arrived the next morning, and the vicitim's hard hat and chain saw were lying near the incident site. The sheriff's deputy turned the motor off, secured the area, and called OSHA. Three days later, the FACE field investigator accompanied the OSHA inspector to the scene. The employer, co-worker and timber rights owner were also al the scene. At the time of the investigation, co-workers re-started the skidder (which had not been moved since the incident). Hydraulic fluid was found on the soil near the blade, apparently having leaked from the lift system. The co-worker was unable to get the lift arms to raise the blade, until additional hydraulic fluid was added. The emergency and micro-switch brakes were field-tested, and held the skidder on the 20% grade.

CAUSE OF DEATH: The coroner's report listed the cause of death as exsanguination.

RECOMMENDATIONS/DISCUSSION

Recommendation #1: Employers should obtain and follow log skidder manufacturers' recommendations before allowing the use of modified equipment.

Discussion: The skidder manufacturer in this incident was equipped with mechanical brakes when the machine was manufactured. The mechanical brakes were replaced with a micro lock brake system at some unknown time before the incident. Apparently, the brakes did not hold the skidder in place on the hill, so it rolled toward the victim and crushed him. The OSHA standards 29 CFR 1910.178(a)(4) and 1910.178(q)(6) require manufacturer approval before modifications or additions are made to industrial trucks.

Recommendation #2: Employers should develop and enforce a safety policy that requires loggers to block skidders parked on a grade.

Discussion: When it is necessary to park a log skidder on a grade, the operator should set the skidder wheels against a large tree or other secure object, engage the parking brake, lower the blade to the ground and put the transmission in neutral before turning off the motor and dismounting. An additional safety practice involves lowering the blade in front and over a secure stump to block the loader from rolling backwards downhill. In this incident, the wheels and blade were unblocked and the motor was left on while the victim worked downhill from the loader.

Recommendation #3: Employers should provide personal communication devices to workers assigned to remote worksites.

Discussion: A reliable system for promptly communicating messages to and from individuals working in remote worksites can provide a safer work environment. Supervisory staff could use radios to locate isolated workers for urgent messages, and the workers could quickly summon assistance if an emergency occurred at their worksite. In this incident, the co-worker would have been able to summon emergency medical services to the

site if a portable phone had been available at the worksite.

Reference: Equipment Manufacturers Institute, Safety Manual for Log Skidders, 1990.